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**FEDERAL-STATE-PRIVATE
COOPERATIVE SNOW SURVEYS**



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FALL WATER SUPPLY SUMMARY FOR NEVADA

Prepared by

U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Collaborating with

**NEVADA DEPARTMENT of CONSERVATION and NATURAL RESOURCES
DIVISION of WATER RESOURCES**

Data included in this report were obtained by the agencies named above in cooperation with Federal, State and private organizations listed on the last page of this report.

AS OF
OCT. 1, 1972

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters of key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

COVER PHOTO NUMBER ORC 221-3

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 209, 701 N. W. Glisan, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	P. O. Box "F", Palmer, Alaska 99645
Arizona	6029 Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 970, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1218 S. W. Washington St., Portland, Oregon 97205
Utah	4012 Federal Bldg., 125 South State St., Salt Lake City, Utah 84111
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82601

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



WATER SUPPLY OUTLOOK FOR NEVADA

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued by

KENNETH E. GRANT
ADMINISTRATOR
SOIL CONSERVATION SERVICE
WASHINGTON, D.C.

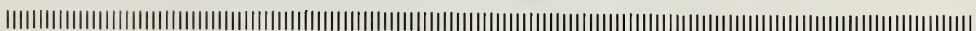


Released by

CHARLES A. KRALL
STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE
RENO, NEVADA

In Cooperation with

ELMO J. DE RICCO
DIRECTOR
DEPARTMENT OF CONSERVATION AND
NATURAL RESOURCES
CARSON CITY, NEVADA



Report prepared by

DONALD W. McANDREW, Snow Survey Supervisor
and

JOHN D. RODA, Assistant Snow Survey Supervisor
SOIL CONSERVATION SERVICE
P. O. BOX 4850
RENO, NEVADA

FALL WATER SUPPLY SUMMARY FOR NEVADA - OCTOBER 1, 1972

Nevada's 1972 irrigation water supply was adequate for most needs. Although April-July streamflow on the east slope of the Sierras was about 60-75 percent of average, reservoir water augmented most deficiencies. The Humboldt and Owyhee Basin streams generally produced normal to above average flows for the April-July period. Early season flows throughout Nevada were above to much above average. Due to the early melt most streams had very large volume flows during March, and peaked earlier than usual. Water users relying solely on natural flows experienced some late season shortages due to the large March streamflows and subsequent early recessions.

This season's crop yields are reported to have been good, with three cuttings of alfalfa hay in northern and central Nevada. Most irrigated crops other than hay also produced average yields. The warm weather in February and early March, followed by cool April temperatures, reduced yields on garlic in the Walker and Carson River drainages, however.

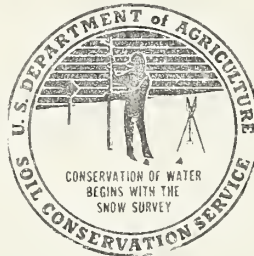
Range forage production was down this summer due to the lack of summer precipitation. The late September storms in northern and central Nevada should help to improve the dry situation.

Mountain soils throughout Nevada and the east slope of the Sierras are extremely dry. The current measurements published in this report indicate soil moisture deficiencies ranging from 2.5 to 7.3 inches of water in the top three to four feet of soil depth.

Nevada's principal reservoirs exclusive of Lake Mead and Lake Mohave contain 997,000 acre feet. This is 132 percent of average, and 60 percent of capacity. Water demands from reservoirs in the Truckee, Carson and Walker River systems was greater than usual due to the below average streamflow produced this year. As a result, storage in Lake Tahoe, Lahontan, Boca, Topaz, and Bridgeport, which usually drops 196,000 acre feet from May to October 1, dropped 314,000 acre feet. Water held in storage in Rye Patch Reservoir insures a good irrigation season on the Lower Humboldt next year. The near average storage remaining in reservoirs on the Truckee, Carson, and Walker River drainages dictates the coming winter's snowpack needs to be average or above average to insure adequate irrigation supplies next summer.

The first water supply outlook report for the upcoming irrigation season will be issued on January 5, 1973. At that time snow survey measurements from key snow courses throughout the state will be available along with data on soil moisture, fall precipitation, and base streamflow. These data should provide a good prediction of the 1973 water supply outlook. Subsequent reports near the first of February, March, April, and May will further refine the outlook and will provide specific numerical forecasts of April-July 1973 streamflow.

Last season's snowpack as reported by daily automatic snow sensor reports appears in graph form on the last six pages of this report. Data from these automatic data sites is available at the end of each week throughout the snow season. If you wish to be added to the mailing list for this daily data, send a request to C. A. Krall, State Conservationist, Soil Conservation Service, P.O. Box 4850, Reno, Nevada 89505.



APRIL - JULY 1972

NEVADA STREAMFLOW FORECASTS
AND
OBSERVED STREAMFLOW

The following table contains April-July forecasts made during the past winter. Observed streamflow quantities are provisional and were furnished by the U.S. Geological Survey.

FORECAST STREAMS	April-July Streamflow, Thousand Acre-Feet						
	Forecast				Observed 1972	Average 1953-67	Observed 1972 as % of 15 yr. av.
	Feb. 1 1972	Mar. 1 1972	Apr. 1 1972	May 1 1972			
Little Truckee above Boca, CA ¹	-	75	64	64	51	81	63
Truckee at Farad, CA ¹	-	240	200	198	164	258	64
Lake Tahoe ³	-	1.32	1.00	1.02	1.06	1.39	76
E. Carson nr Gardnerville, NV	-	155	135	135	134	175	77
E. Carson nr Gardnerville, NV (Date of 200 c.f.s. flow)	-	7/10	7/8	7/8	7/7	7/23	-
W. Carson at Woodfords, CA	-	48	40	40	39	51	76
Carson nr Carson City, NV	-	150	116	116	108	166	65
Carson nr Ft. Churchill, NV	-	135	101	100	92	150	61
E. Walker nr Bridgeport, CA ²	-	51	40	40	31	60	52
W. Walker below Little Walker nr Coleville, CA	165	130	114	115	108	143	76
Lamoille Creek nr Lamoille, NV	-	28	24	24	23	25	92
S. Fork Humboldt nr Elko, NV	-	75	53	53	41	58	71
Marys River above Hot Springs, NV	-	37	33	32	NA	28	NA
N. Fork Humboldt at Devils Gate, NV	-	43	35	33	NA	26	NA
Humboldt at Palisade, NV	236	202	170	160	139	154	90
Humboldt at Comus, NV	-	165	120	115	112	110	102
Martin Creek nr Paradise, NV	-	20	16	14	14	14	100
Owyhee nr Gold Creek, NV ¹	32	39	30	25	23	16	144
Owyhee nr Owyhee, NV ¹	131	110	80	78	86	60	143

1 Corrected for storage above station.

2 April-August flow, corrected for storage.

3 Maximum rise in feet from April 1, assuming gates closed.

NA Not available

NEVADA
STATUS OF RESERVOIR STORAGE
October 1, 1972

BASIN and Stream	RESERVOIR	USABLE CAPACITY (1000 AF)	USABLE STORAGE - 1000 ACRE-Feet				15 Year Average 1953-67
			1972	1971	1970		
Owyhee	Wild Horse	72	54	55	34		12
Lower Humboldt	Rye Patch	179	152	161	161		58
Colorado	Mohave	1,810	1,404	1,422	1,376		1,413
Colorado	Mead	27,217	17,451	16,890	16,769		16,905
Tahoe	Tahoe	732	483	569	536		436
Truckee	Boca	41	28	32	27		10
Truckee	Prosser	29*	14	25	16		Storage began 1/30/63
Truckee	Stampede	220	116	150	88		Storage began 8/1/69
Carson	Lahontan	314	134	180	144		109
West Walker	Topaz	59	10	21	19		17
East Walker	Bridgeport	42	6	20	15		14

* Flood control use allocation of 20,000 acre-feet between November 1 and April 10.

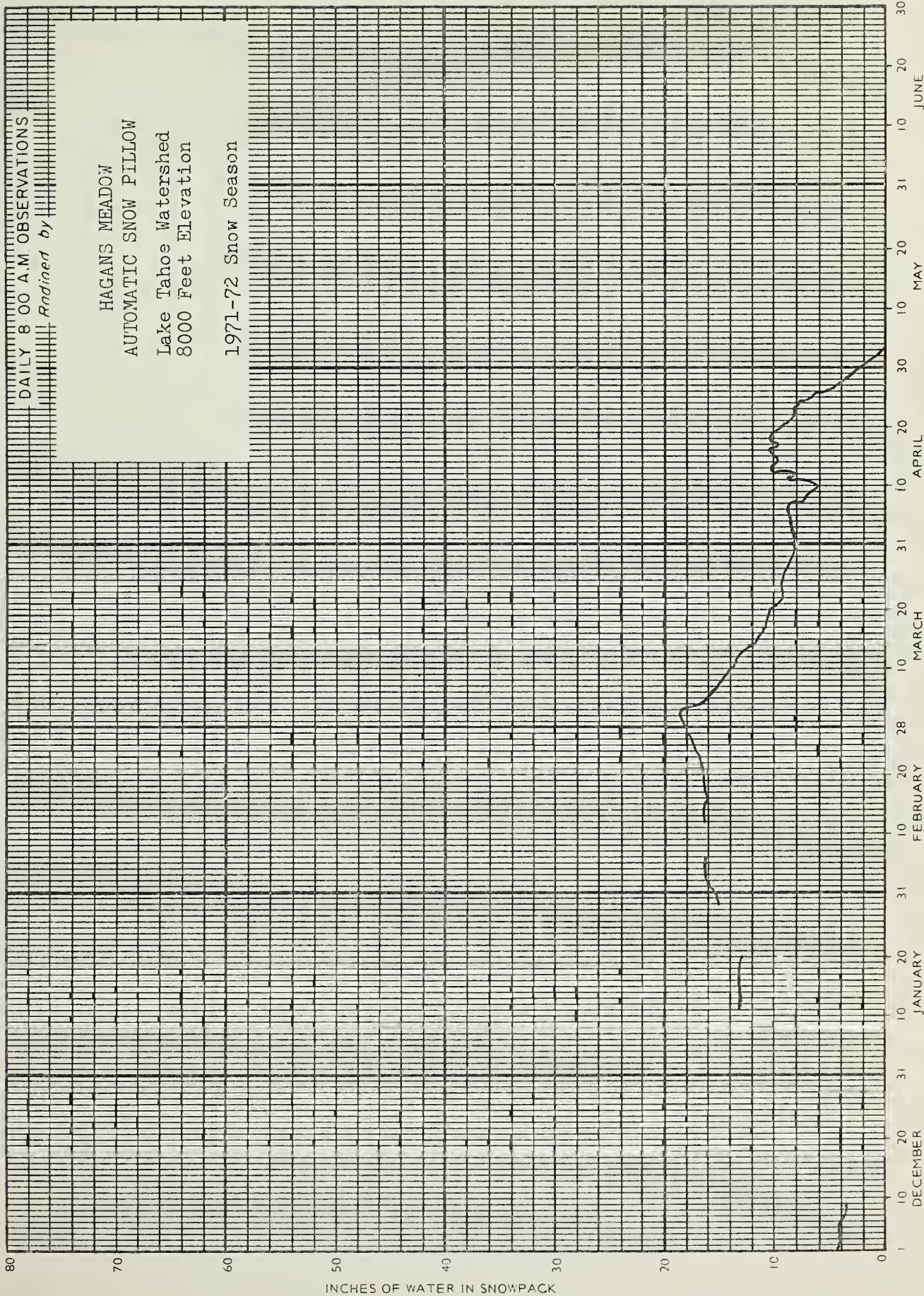
NEVADA

SOIL MOISTURE

October 1, 1972

STATION	Elevation	PROFILE (Inches)		Date	SOIL MOISTURE (Inches)		
		Depth	Capacity		This Year	Last Year	2 Yrs Ago
<u>EAST SLOPE SIERRA</u>							
Independence Camp	7000	34	6.10	9/25	2.2	1.9	1.8
Hagans Meadow	8000	36	3.65	9/14	1.1	1.8	1.3
Marlette Lake	8000	50	3.70	9/23	1.1	1.6	1.5
Truckee #2	6400	18	3.65	9/25	1.1	1.0	1.1
Ward Creek	7000	49	5.80	9/14	1.7	1.9	1.7
Sonora Pass	8800	48	8.30	9/20	2.8	3.1	2.8
Virginia Lake	9200	40	5.00	9/19	1.9	1.7	1.4
<u>HUMBOLDT BASIN</u>							
Rodeo Flat	6800	42	11.00	8/22	4.9	5.1	5.9
<u>OWYHEE BASIN</u>							
Big Bend	6700	48	16.70	8/22	12.3	11.2	9.2
Jack Creek, Lower	6800	48	8.70	8/22	4.1	5.1	6.4
Taylor Canyon	6200	48	15.00	8/22	7.7	7.8	8.0

U.S.D.A. SOIL CONSERVATION SERVICE DAILY RADIO REPORTS BY AUTOMATIC SNOW MEASURING STATION



DAILY 8 00 A.M. OBSERVATIONS
Revised by

HAGANS MEADOW
 AUTOMATIC SNOW PILLOW
 Lake Tahoe Watershed
 8000 Feet Elevation
 1971-72 Snow Season

INCHES OF WATER IN SNOWPACK

U.S.D.A. SOIL CONSERVATION SERVICE DAILY RADIO REPORTS BY AUTOMATIC SNOW MEASURING STATION

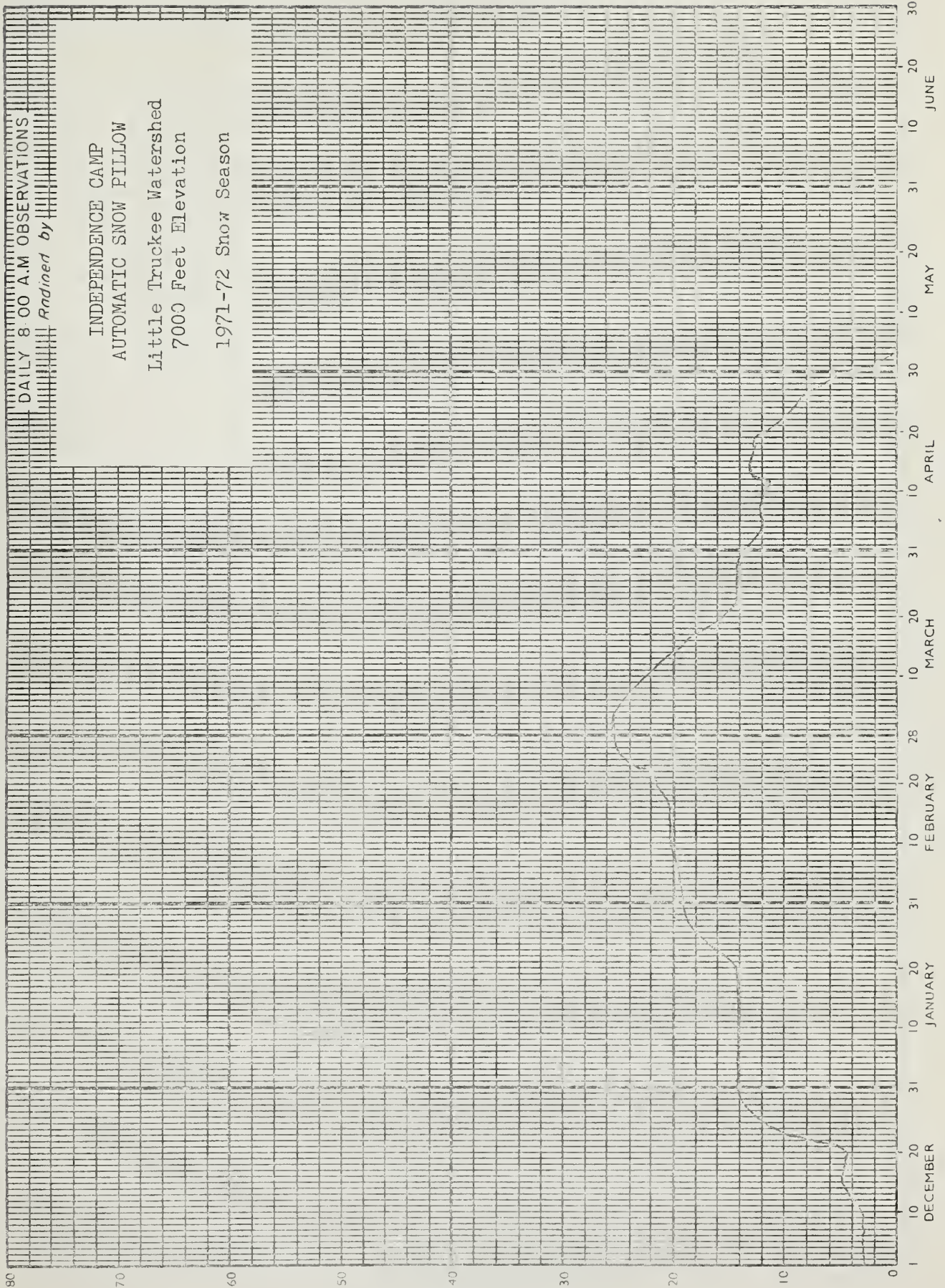
DAILY 8:00 A.M. OBSERVATIONS
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INDEPENDENCE CAMP
 AUTOMATIC SNOW PILLOW

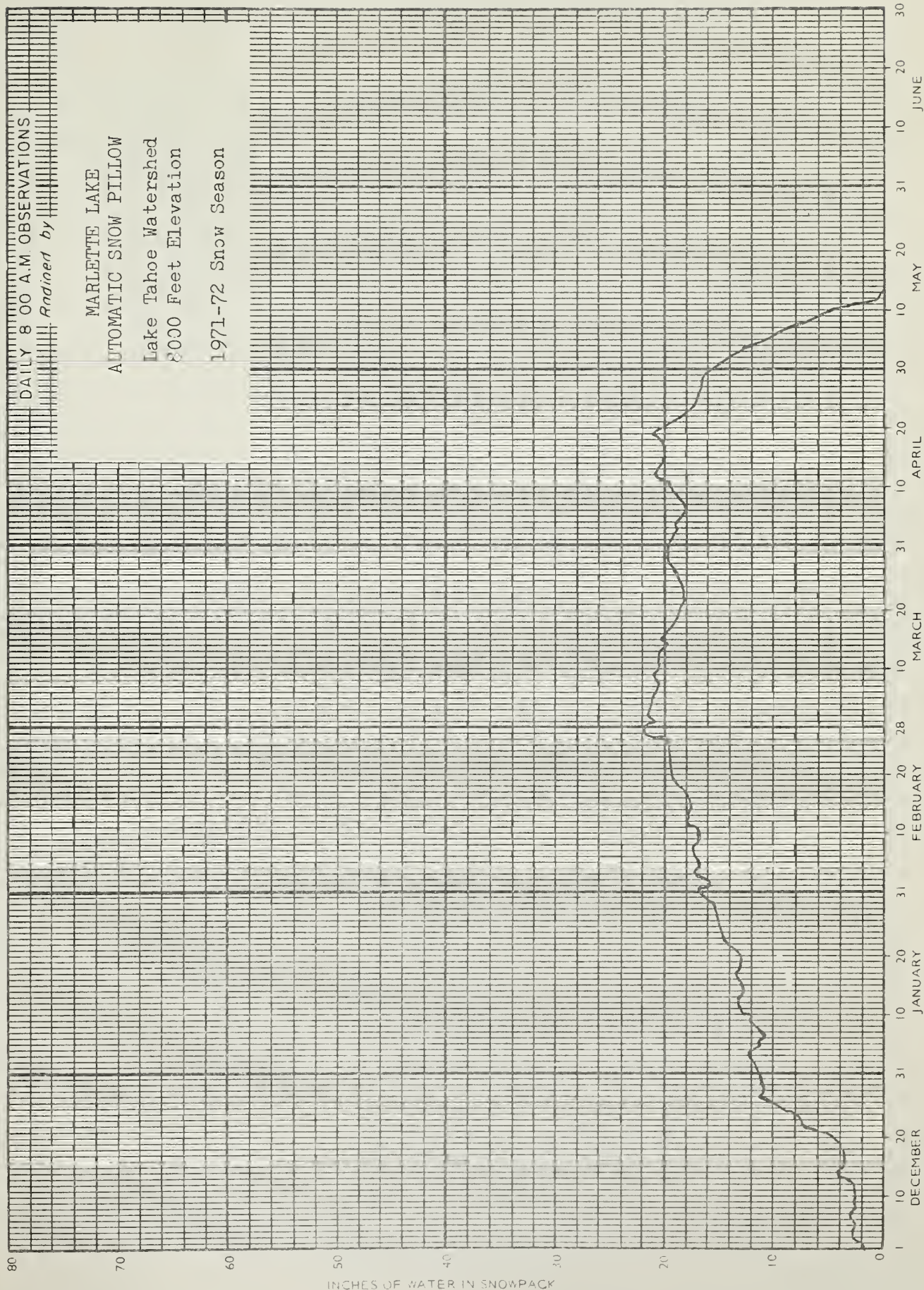
Little Truckee Watershed
 7000 Feet Elevation

1971-72 Snow Season

INCHES OF WATER IN SNOWPACK



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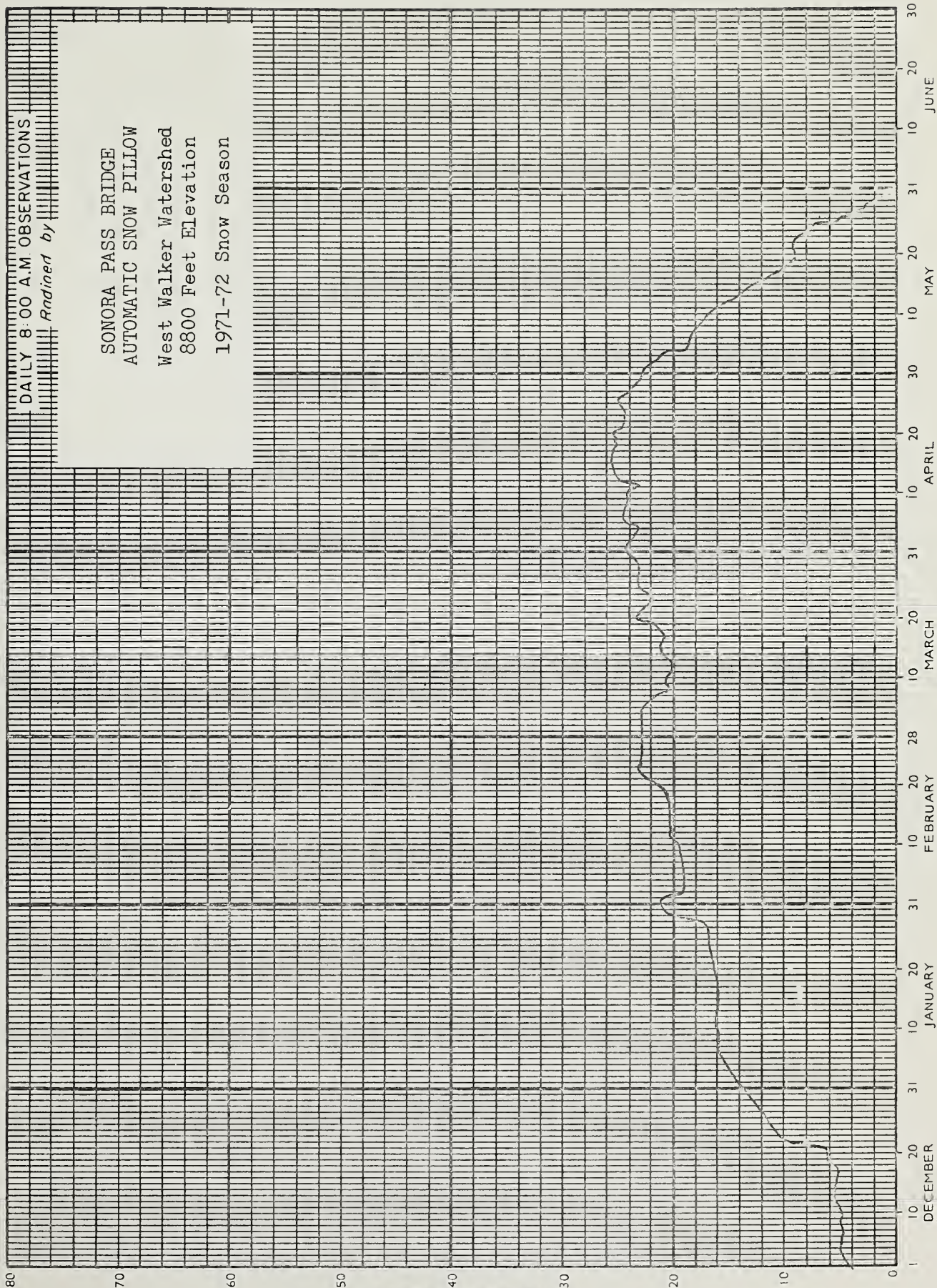
U.S.D.A. SOIL CONSERVATION SERVICE DAILY RADIO REPORTS BY AUTOMATIC SNOW MEASURING STATION

DAILY 8:00 A.M. OBSERVATIONS

Redlined by

SONORA PASS BRIDGE
AUTOMATIC SNOW PILLOW
West Walker Watershed
8800 Feet Elevation
1971-72 Snow Season

INCHES OF WATER IN SNOWPACK



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DAILY 8:00 A.M. OBSERVATIONS

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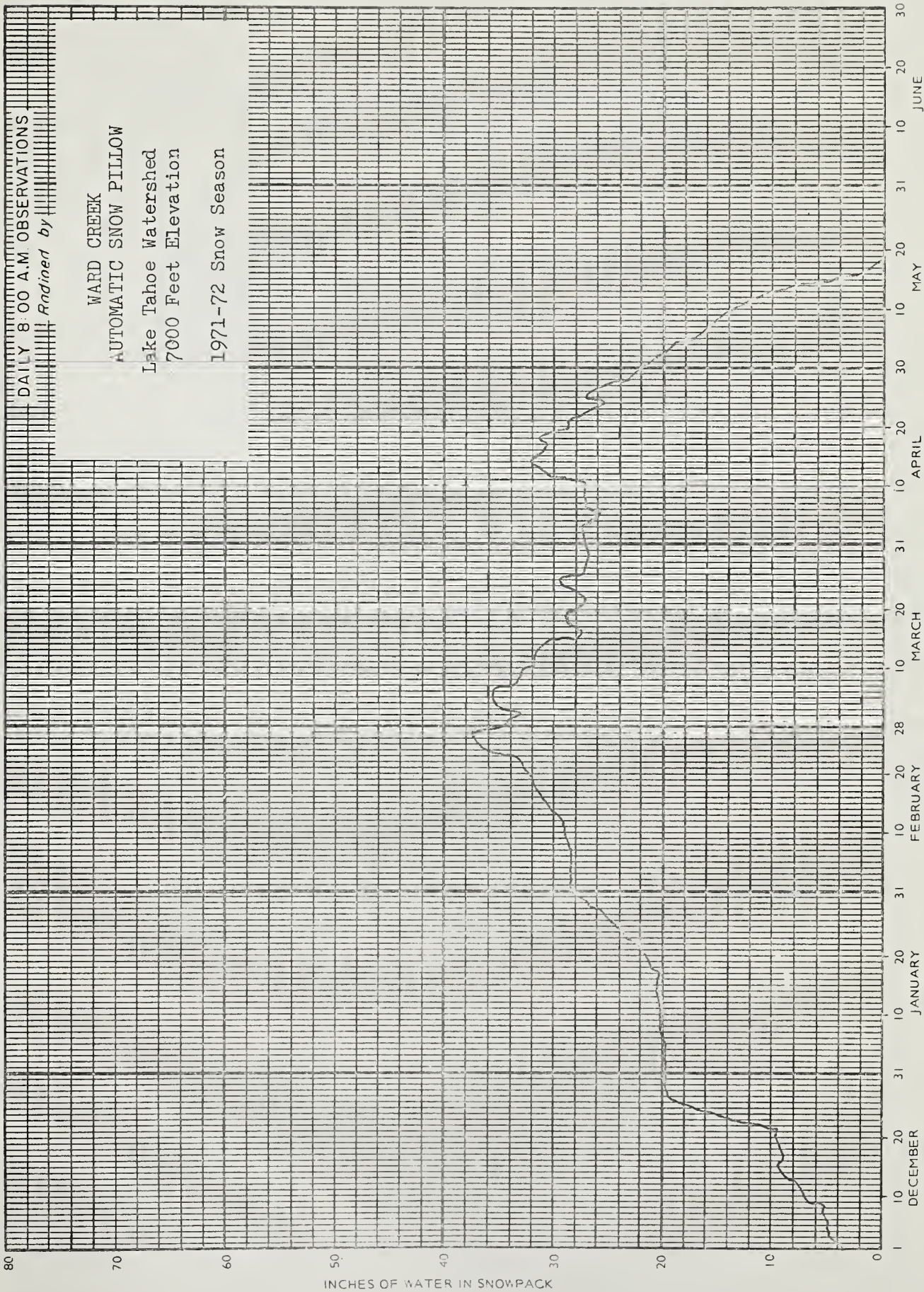
WARD CREEK

AUTOMATIC SNOW PILLOW

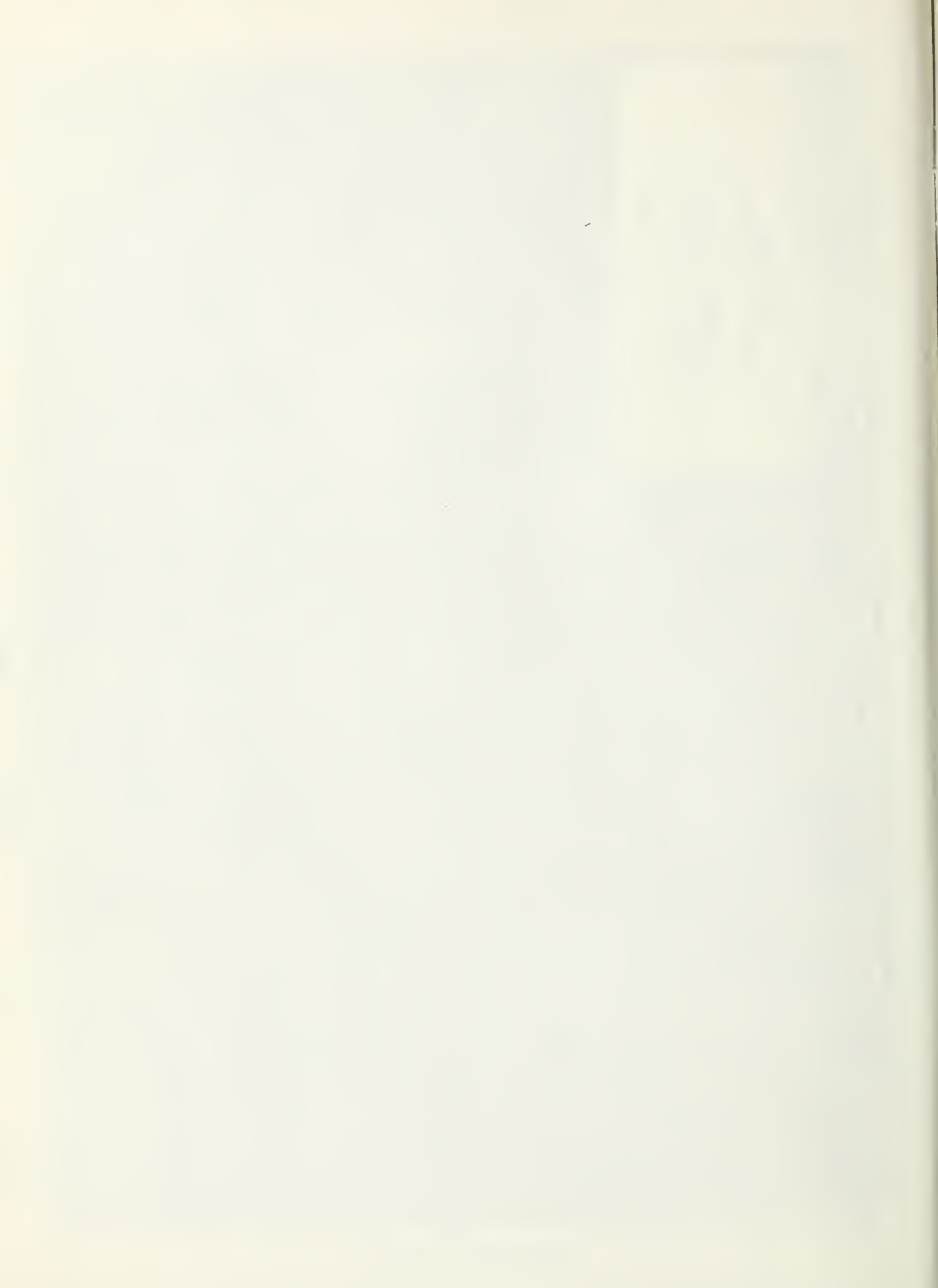
Lake Tahoe Watershed

7000 Feet Elevation

1971-72 Snow Season



INCHES OF WATER IN SNOWPACK



Agencies Cooperating in Collecting Data Contained in this Bulletin

FEDERAL

- Agricultural Research Service
- Bureau of Reclamation
- Fish and Wildlife Service
- Forest Service
- Geological Survey
- Navy
- Soil Conservation Service
- U. S. District Court - Federal Water Master
- NOAA, National Weather Service

STATE

- California Cooperative Snow Surveys
- California Department of Parks and Recreation
- California Department of Water Resources
- Colorado River Commission of Nevada
- Idaho Cooperative Snow Surveys
- Nevada Association of Conservation Districts
- Nevada Department of Conservation & Natural Resources
 - Division of Water Resources
 - Nevada State Forester
- Oregon Cooperative Snow Surveys
- Utah Cooperative Snow Surveys
- White Mountain Research Station, Univ. of California

PRIVATE

- Amalgamated Sugar Company
- Kennecott Copper Corporation
- Nevada Irrigation District
- Owyhee Project North Board of Control
- Owyhee Project South Board of Control
- Pacific Gas and Electric Company
- Pershing County Water Conservation District
- Sierra Pacific Power Company
- Truckee-Carson Irrigation District
- Walker River Irrigation District
- Washoe County Water Conservancy District

Other organizations and individuals furnish valuable information for the snow survey reports. Their Cooperation is gratefully acknowledged.

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

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